A preliminary analysis of a prescriptive block replacement policy for a degrading production system

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Résumé

Most of the current research in production management is related to the question of integrating data analytics in optimization models. This leads to some very nice models, especially for maintenance planning. Nevertheless, from our point of view, the question of integrating such data-based maintenance optimization models in production planning context remains challenging. The objective of this work is to investigate first insights into prescriptive maintenance within production management context. In this
paper, we propose to elaborate a maintenance decision model for a degrading production system. The model allows to optimize both the expected capacity for production planning without maintenance interruption and a condition preventive replacement setting out of the production time. The maintenance decision is also extended to ensure the production objectives with a new prescriptive decision: the acceleration or deceleration production rate which also impacts the degradation speed.

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